



LAWRENCE
LIVERMORE
NATIONAL
LABORATORY

LLNL-TR-459195

EEMP Summary for NIF shot: N101004-002-999

J. Kimbrough

October 13, 2010

Disclaimer

This document was prepared as an account of work sponsored by an agency of the United States government. Neither the United States government nor Lawrence Livermore National Security, LLC, nor any of their employees makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States government or Lawrence Livermore National Security, LLC. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States government or Lawrence Livermore National Security, LLC, and shall not be used for advertising or product endorsement purposes.

This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

EEMP summary for NIF shot: N101004-002-999

Non-damaging EMP fields
(no damage reports).
Low EMP. Similar to,
slightly lower than, similar
N100821 shot below.

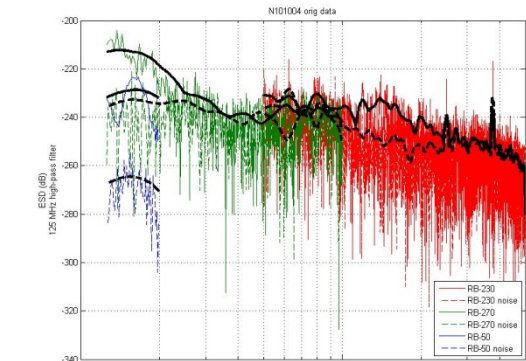
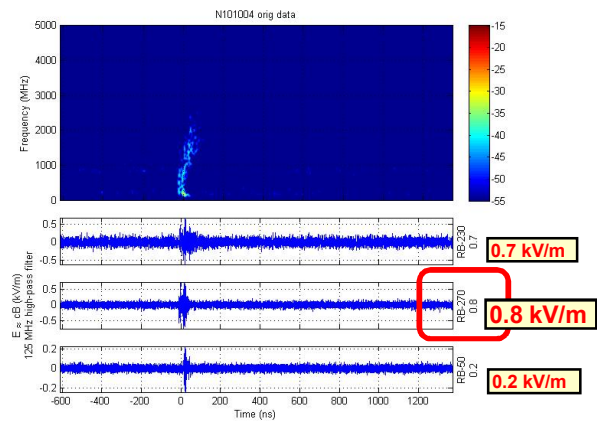
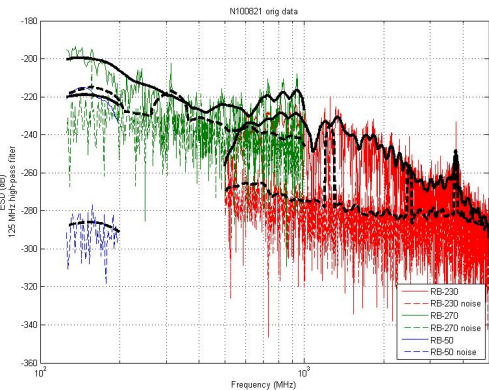
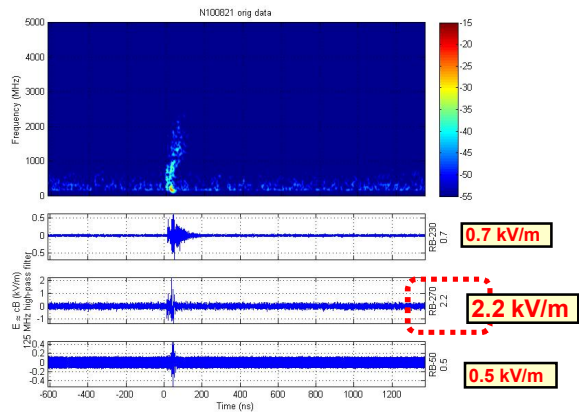
**Internal EMP peak
field*: ~0.8 kV/m****
*at R = 4.0m from TCC, for B270
Bdot sensor (1GHz bandwidth).
Fields may vary ~ 1/R², so fields at
R = 1m could be ~16x larger than
those reported here.
** Qlook2 w/ spectrum analysis

Shot ID: IT_0_Symcap_S03t
Laser: 1.06 MJ; ~Hahn ~3ns; 188b, 47q.
Target: Cold gas Hohl: Au, 359T He4.
Cap: 6%D+70%He3, 2992T=3.93atm
Notes: Neutron Yield ~NA.

Basis =>	QLOOK	Long Pulse	Long Pulse	
Peak E-field	Code	Sprd Spect	Sprd Spect	T. Chamber
	=> (kV/m)	Est (kV/m)	Est (V/m)	attn (x)
	internal	internal	external	
B230 (5GHz)	0.70	0.70	NA	NA
B270 (1 GHz)	0.80	1.70	4	425
B50 (0.2 GHz)	0.20	0.58	6.6	88

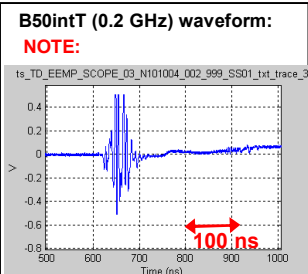
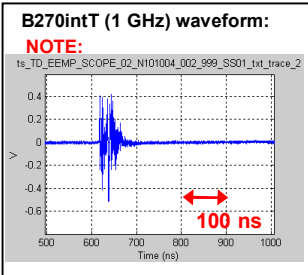
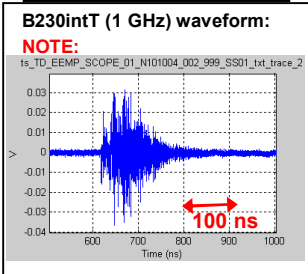
COMPARISON: N100821, 1.04
MJ, IT_0_Symcap_s07h

THIS SHOT : N101004-002, 1.06 MJ,
IT_0_Symcap_S03t



NOTE: S/N improves if use alternate
channels for spectra.

**THIS SHOT
Waveforms** ↓



**N100821:
Waveforms** ↓

